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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,957	08/07/2001	Monica Minden	HRL035	2002

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EXAMINER	
RODRIGUEZ, ARMANDO	

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/924,957	MINDEN ET AL.	
	Examiner	Art Unit	
	Armando Rodriguez	2828	AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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TECHNOLOGY CENTER 2800

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

Applicant's arguments filed August 21, 2003 have been fully considered but they are not persuasive.

Applicant's arguments on pages 9 and 10 pertain primarily to independent claim 1, where applicants are unaware of how the single longitudinal mode fiber laser of Stepanov et al provides single polarization output. The examiner has introduced a reference to D'Amato et al, which explains how a single longitudinal mode fiber laser provides single polarization. In column 5 lines 48-64, D'Amato et al discloses that it is well known to suppress adjacent longitudinal modes by use of gratings and that the degree of differential loss required to suppress one polarization state is substantially less than that required to suppress adjacent longitudinal modes, therefore any person having ordinary skill in the art will understand that by D'Amato et al obtaining single longitudinal mode operation of the fiber laser will also obtain a single polarization output.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4,6-12,14-20,22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stardubov et al (PN 6,344,298) in view of Stepanov et al (PN

6,272,165), Anderson et al (PN 5,327,515), Fermann et al (PN 6,072,811) and D'Amato et al (PN 5,511,083).

Regarding claims 1,9,

In figure 3 Stardubov et al illustrates a mask being irradiated by an argon laser source, having wavelengths within the range of 275nm to 351nm, for forming a Bragg grating within an optical fiber that has been coiled into a spiral, as described in column 4.

Stardubov et al is silent as to the optical fiber being doped to form a fiber laser.

Stepanov et al illustrates in figure 1 a ring rare earth doped fiber laser having a grating within the fiber laser, as described in the abstract and column 3.

In column 5 lines 48-64, D'Amato et al discloses that it is well known to suppress adjacent longitudinal modes by use of gratings and that the degree of differential loss required to suppress one polarization state is substantially less than that required to suppress adjacent longitudinal modes, therefore any person having ordinary skill in the art will understand that by D'Amato et al obtaining single longitudinal mode operation of the fiber laser will also obtain a single polarization output.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to fabricate a grating within the ring fiber laser of Stepanov et al using the mask of Stardubov et al because the mask has a circumferential pattern which would allow forming a grating within a curved fiber laser and the formed grating would allow the fiber laser to operate in a single longitudinal mode.

Regarding claims 2,3,8,10,11,16,18,19,24,

In figure 3 Stardubov et al illustrates a mask being irradiated by an argon laser source, having wavelengths within the range of 275nm to 351nm, for forming a Bragg grating within an optical fiber that has been coiled into a spiral, as described in column 4.

Regarding claims 5,13,21.

The use of a glass slide or a lens within a system for forming Bragg grating within optical fibers is well known in the art, as shown by Anderson et al in figure 2.

Regarding claim 6,14,22,

Stepanov et al illustrates in figure 1 a ring rare earth doped fiber laser having a grating within the fiber laser, as described in the abstract and column 3.

Regarding claim 7,15,23

The use of neodymium (Nd) as a rare earth dopant in fiber lasers is notoriously well known in the art.

Regarding claim 17,

In figure 3 Stardubov et al illustrates a mask being irradiated by an argon laser source, having wavelengths within the range of 275nm to 351nm, for forming a Bragg grating within an optical fiber that has been coiled into a spiral, as described in column 4.

Stardubov et al is silent as to the optical fiber being doped to form a fiber laser.

Stepanov et al illustrates in figure 1 a ring rare earth doped fiber laser having a grating within the fiber laser, as described in the abstract and column 3.

In the abstract Fermann et al teaches that by tightly coiling a fiber will induce a loss, which will provide single polarization.

Therefore, it would have been obvious to a person having ordinary skill in the art to tightly coil the laser fiber loop of Stepanov et al as suggested by Fermann et al because it would provide a single polarization beam.

Regarding claims 4,12,20,

Stardubov et al discloses the claimed invention except for the arrangement of the lens. It would have been an obvious matter of design choice to arrange a lens prior to the mask, since it appears that the invention would perform equally well without the lens as shown by Stardubov et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.

Armando Rodriguez
Examiner
Art Unit 2828

Paul Ip
Supervisor
Art Unit 2828

AR/PI